



Air Quality Permitting Statement of Basis

November 24, 2005

**Tier II Operating Permit
No. T2-050413**

**Glanbia Foods, Inc.
Richfield Facility**

Facility ID No. 063-00003

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PROPOSED PUBLIC COMMENT

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Acronyms, Units, and Chemical Nomenclature

acfm	actual cubic feet per minute
AFS	AIRS Facility Subsystem
AIRS	Aerometric Information Retrieval System
Btu	British thermal unit
CFR	Code of Federal Regulations
CO	carbon monoxide
DEQ	Department of Environmental Quality
EPA	Environmental Protection Agency
gr	grain (1 lb = 7,000 grains)
HAPs	Hazardous Air Pollutants
IDAPA	A numbering designation for all administrative rules in Idaho promulgated in accordance with the Idaho Administrative Procedures Act
lb/hr	pound per hour
m	meter(s)
MACT	Maximum Available Control Technology
MMBtu	Million British thermal units
NESHAP	Nation Emission Standards for Hazardous Air Pollutants
NO _x	nitrogen oxides
NSPS	New Source Performance Standards
PM	Particulate Matter
PM ₁₀	Particulate Matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers
PSD	Prevention of Significant Deterioration
PTC	Permit to Construct
PTE	Potential to Emit
Rules	Rules for the Control of Air Pollution in Idaho
SIC	Standard Industrial Classification
SIP	State Implementation Plan
SM	synthetic minor
SO ₂	sulfur dioxide
T/yr	Tons per year
µg/m ³	micrograms per cubic meter
UTM	Universal Transverse Mercator
VOC	volatile organic compound

1. PURPOSE

The purpose for this memorandum is to satisfy the requirements of IDAPA 58.01.01.400 through 410, and 200 through 228, *Rules for the Control of Air Pollution in Idaho (Rules)* for issuing Tier II operating permits and Permits to Construct, respectively.

2. FACILITY DESCRIPTION

The Glanbia Richfield facility (Glanbia Richfield) processes whey into lactose products, whey protein concentrate, and Provon (whey high protein content concentrate). Whey is processed through filtration; the products are dried in baghouse dryers and packaged on-site.

3. FACILITY / AREA CLASSIFICATION

Glanbia Richfield is classified as a minor facility because the potential to emit is less than major source thresholds without requiring limits on its potential to emit. The facility SIC code is 2023. The AIRS classification is "B".

The facility is located within AQCR 63 and UTM zone 11. The facility is located in Lincoln County which is classified as unclassifiable for all regulated criteria pollutants (PM₁₀, CO, NO_x, SO₂, lead, and ozone).

The AIRS information provided in Appendix A defines the classification for each regulated air pollutant at Glanbia Richfield. This required information is entered into the EPA AIRS database.

4. APPLICATION SCOPE

This facility-wide permit will limit the facility's potential to emit to protect ambient air quality standards. The facility's existing permit, PTC No. 063-00003, was issued August 27, 1992, and revised June 6, 1994, June 9, 1995, and May 7, 2000. The terms and conditions of the PTC are incorporated in this facility-wide permit.

4.1 Application Chronology

October 22, 2004	Glanbia, Inc. applies for Permit to Construct exemption for four whey dryers.
December 12, 2004	Glanbia, Inc. withdraws the whey dryer Permit to Construct exemption request.
June 14, 2005	Glanbia, Inc. applies for a Tier II permit.
August 16, 2005	The Tier II permit application is determined complete.
September 20, 2005	Draft permit is sent to facility.
November 30, 2005	DEQ issues proposed permit for public comment

5. PERMIT ANALYSIS

This section of the Statement of Basis describes the regulatory requirements for this Tier II permit.

5.1 Equipment Listing

Table 5.1 EQUIPMENT LISTING

Permit Section	Source Description	Emissions Controls
3	<u>Boiler</u> Cleaver Brooks model CB-200-600-160 25.13 MMBtu/hr Burner type: horizontal Stack gas flow rate: 8,006 acfm @ 370 °F Fuel: propane	None
3	<u>Boiler</u> Kewanee Classic III model H3S-600G02 25.13 MMBtu/hr Burner type: horizontal Stack gas flow rate: 8,006 acfm @ 370 °F Fuel: propane	None
4	<u>Baghouse Dryer Units</u> Blau Knox baghouse dryer Uses boiler steam for drying 300 lb/hr maximum dry solids production Baghouse exhaust rate: 10,000 acfm @ 248 °F Niro 50 baghouse dryer Uses boiler steam for drying 150 lb/hr maximum dry solids production Baghouse exhaust rate: 2,500 acfm @ 167 °F Niro 125 (Provon dryer) baghouse dryer Uses boiler steam for drying 600 lb/hr maximum dry solids production Baghouse exhaust rate: 6,500 acfm @ 167 °F Niro model SD-6.3-N “R & D” electric baghouse dryer 20 lb/hr maximum dry solids production Baghouse exhaust rate: 415 acfm @ 167 °F Phoenix propane fired baghouse dryer 8 MMBtu/hr maximum heat input 2000 lb/hr maximum dry solids production Burner exhaust rate: 1,872 acfm @ 248 °F Baghouse exhaust rate: 16,000 acfm @ 167 °F	None
5	<u>Conveyor baghouses</u> Turbotron TBT -600-AB/RU Conveyor: Niro 125 line to bin 700 lb/hr maximum dry solids input Baghouse exhaust rate: 400 acfm @ 167 °F Turbotron TB010RA 15CK Conveyor: Phoenix line to bin 1200 lb/hr maximum dry solids input Baghouse exhaust rate: 400 acfm @ 167 °F New York Blower Co. F-5762-140 Conveyor: Phoenix line to receiver 1200 lb/hr maximum solids input Baghouse exhaust rate: 800 acfm @ 167 °F	None

Permit Section	Source Description	Emissions Controls
5	<p>Unknown manufacturer Conveyor: Niro 50 line to receiver 250 lb/hr maximum solids input Baghouse exhaust rate: 800 acfm @ 167 °F</p> <p>New York Blower Co. 2106 Conveyor: Blau Knox line to D50 receiver 250 lb/hr maximum solids input Baghouse exhaust rate: 500 acfm @ 167 °F</p> <p>Abb Richardson PPHVD Conveyor: Blau Knox line to D7 receiver 350 lb/hr maximum solids input Baghouse exhaust rate: 800 acfm @ 167 °F</p>	None
	<p><u>Miscellaneous sources not regulated by this permit:</u></p> <p>1. Propane vaporizers¹:</p> <ul style="list-style-type: none"> • Ransome 0.91 MMBtu/hr • Ransome 0.91 MMBtu/hr • Sandick 0.55 MMBtu/hr <p>2. Indoor air (quality control)</p> <p>3. Building heaters:</p> <ul style="list-style-type: none"> • Eight building heaters • All heaters are less than 0.25 MMBtu/hr • All heaters are propane fired 	<p>1. None</p> <p>2. New York Burner Co. nuisance dust baghouse 540 acfm @ 77 °F PM₁₀ emissions 0.001 lb/hr; 0.004 T/yr</p> <p>Lamsen vacuum baghouse 800 acfm @ 77 °F PM₁₀ emissions 0.001 lb/hr; 0.004 T/yr</p> <p>3. None</p>

¹ propane vaporizers are used for cold weather priming of the propane fuel prior to firing in the boilers.

5.2 Emissions Inventory

Table 5.2 is a summary of Glanbia Richfield emissions. These emissions represent Potential to Emit, or full time operations at maximum production capacity. A detailed emissions inventory is included as Appendix B.

TABLE 5.2 EMISSION INVENTORY SUMMARY

Equipment Type	Equipment Name	Emission Rate (ton/year)						
		PM	PM ₁₀	NOx	SO ₂	CO	VOC	Lead
Baghouse-Dryer	Blau Knox	0.13	0.13	-	-	-	-	-
Baghouse-Dryer	Niro 125	0.26	0.26	-	-	-	-	-
Baghouse-Dryer	Niro 50	0.07	0.07	-	-	-	-	-
Baghouse-Dryer	Niro - R&D Dryer	0.01	0.01	-	-	-	-	-
Baghouse-Dryer	Phoenix	0.88	0.88	-	-	-	-	-
Baghouse-Conveyor	Niro 125	0.03	0.03	-	-	-	-	-
Baghouse-Conveyor	Phoenix	0.53	0.53	-	-	-	-	-
Baghouse-Conveyor	Phoenix	0.53	0.53	-	-	-	-	-
Baghouse-Conveyor	Niro 50	0.11	0.11	-	-	-	-	-
Baghouse-Conveyor	Blau Knox	0.11	0.11	-	-	-	-	-
Baghouse-Conveyor	Blau Knox	0.15	0.15	-	-	-	-	-
Baghouse	Nuisance Dust	0.00	0.00	-	-	-	-	-
Baghouse	Lamsen Vacuum	0.00	0.00	-	-	-	-	-
Boiler	Cleaver Brooks	0.73	0.73	23.11	1.91	3.89	0.36	-
Boiler	Kewanee Classic III	0.73	0.73	23.11	1.91	3.89	0.36	-
Dryer element	Phoenix	0.15	0.15	5.36	0.60	0.73	0.11	-
Heater - On Ground	Milling Room	0.003	0.003	0.101	0.011	0.014	0.002	-
Heater - Roof Mounted	Chemical Room	0.008	0.008	0.268	0.030	0.036	0.006	-
Heater - Roof Mounted	Proven 1-3 Room	0.005	0.005	0.168	0.019	0.023	0.004	-
Heater - Roof Mounted	Alcove Room	0.002	0.002	0.056	0.006	0.008	0.001	-
Heater - Roof Mounted	Alcove Room	0.003	0.003	0.090	0.010	0.012	0.002	-
Heater - Roof Mounted	Milling Compr Rm	0.002	0.002	0.084	0.009	0.011	0.002	-
Heater - Roof Mounted	Office/Conference	0.003	0.003	0.094	0.011	0.013	0.002	-
Heater - Roof Mounted	Packaging Room	0.004	0.004	0.137	0.015	0.019	0.003	-
Propane Vaporizer	Vaporizer - Ransome	0.017	0.017	0.610	0.068	0.083	0.013	-
Propane Vaporizer	Vaporizer - Ransome	0.017	0.017	0.610	0.068	0.083	0.013	-
Propane Vaporizer	Vaporizer - Sam Dick	0.011	0.011	0.369	0.041	0.050	0.008	-
TOTALS		4.49	4.49	54.16	4.71	8.86	0.90	0.00

5.3 Modeling

DEQ's modeling memorandum is presented as Appendix C.

5.4 Regulatory Review

This section describes the regulatory analysis of the applicable air quality rules with respect to this facility-wide permit.

IDAPA 58.01.01.400.....Procedures and Requirements for Tier II Operating Permits

This facility is required to obtain this permit to protect ambient air quality standards by limiting the facility's Potential to Emit. Permit to Construct requirements have not been triggered; therefore, this section addresses only those requirements that apply to Tier II permits.

40 CFR 60 Subpart Dc.....Standards of Performance for Small Industrial – Commercial – Institutional Steam Generating Units

Both boilers at Glanbia Richfield are subject to NSPS Subpart Dc. At the time of this memo, requirements for propane fired boilers are limited to recordkeeping and reporting. Specifically, the boiler fuel use must be recorded daily and reported to EPA. On September 13, 2005, the EPA granted Glanbia's request to reduce fuel usage recordkeeping requirements from daily to monthly, and to allow one gas meter to record monthly propane usage for both boilers. A copy of the EPA approval is included as Appendix D.

All NSPS sources are also subject to the requirements of NSPS Subpart A, *General Provisions*. Section 7 of Subpart A, *Notification and Recordkeeping* is cited in the permit to call attention to:

- A notification of any physical or operational change to an existing facility which may increase the emission rate of any air pollutant to which a standard applies...; and,
- Any owner or operator subject to the provisions of this part shall maintain a file of all measurements, including ...performance testing measurements...and all other information required by this part recorded in a permanent form suitable for inspection. The file shall be retained for at least two years following the date of such measurements, maintenance ... *etc.*

5.5 **Fee Review**

Table 5.3 is the Glanbia Richfield Tier II processing fee. The \$ 5,000 applies to facilities with permitted emissions of 10 to less than 100 tons per year. The processing fee will be assessed upon issuance of the final permit.

Table 5.3 TIER II PROCESSING FEE SUMMARY

Emissions Inventory	
Pollutant	Permitted Emissions
NO _x	54.16
SO ₂	4.71
CO	8.86
PM ₁₀	4.49
VOC	0.90
TAPS/HAPS	0.0
Total:	73.12
Fee Due	\$ 5,000.00

5.6 **Regional Review of Draft Permit**

The draft permit was made available to DEQ's Twin Falls Regional Office September 20, 2005. Comments have been incorporated into the proposed permit.

5.7 **Facility Review of Draft Permit**

The draft permit was made available to Glanbia, Inc. September 20, 2005. Comments have been incorporated into the proposed permit.

6. **PERMIT CONDITIONS**

Permit Section 2: FACILITY-WIDE CONDITIONS

Permit Condition 2.4 establishes the requirement for quarterly facility-wide fugitive emissions inspections.

Permit Condition 2.8 establishes the requirement for quarterly facility-wide visible emissions inspections.

Permit Section 3: CLEAVER BROOKS AND KEWANEE BOILERS

Permit Condition 3.3, *Emission Limits*, updated the emission limits for the boilers based on EPA data for propane combustion. At maximum operating capacity, modeled emissions from the boilers do not cause or contribute to a violation of any air quality standard. NO_x is the facility's most limiting pollutant, and is therefore specifically limited to establish the facility's Potential to Emit. Permit Condition 3.3 also restates the Facility-Wide Condition 2.15 *Fuel Burning Equipment* grain loading standard for gas fired burners.

Permit Condition 3.5, *Fuel Usage*, establishes propane as the only allowable fuel. The boilers had previously been allowed to burn No. 2 fuel oil.

Permit Condition 3.6, *New Source Performance Standards: 40 CFR 60 Subpart Dc*, states the subpart applicability and the reporting and recordkeeping requirements of 60.48(c). On September 13, 2005, the EPA granted Glanbia's request to reduce fuel usage recordkeeping requirements from daily to monthly, and to allow one gas meter to record monthly propane usage for both boilers. A copy of the EPA approval is included as Appendix D.

Permit Condition 3.6 also serves to remind the facility of NSPS Subpart A applicability, particularly the *Notification and Recordkeeping* section, 40 CFR 60.7.

Permit Section 4: WHEY DRYERS

The baghouse dryers dry the whey with air heated by boiler steam, electricity, or propane. The Phoenix baghouse dryer is the only dryer with a self contained combustion heat source – an 8 MMBtu/hr propane burner.

Permit Condition 4.3, *Combustion Emissions – Phoenix Baghouse Dryer*, limits the particulate matter emissions from the Phoenix burner to the state standard for gas fired burners.

Permit Condition 4.5, *Operation and Maintenance Manual*, establishes the requirement for an O&M manual for the baghouses.

Permit Condition 4.6, *Baghouse Filter Bag Requirements*, establishes a minimum 99.99% PM₁₀ efficiency for the baghouse filter bags – the collection efficiency claimed by Glanbia Richfield, and used to calculate the facility emissions.

Permit Condition 4.7, *Pressure Drop Monitoring Device*, requires pressure drop instrumentation on all the baghouse dryers.

Permit Condition 4.8, *Baghouse Pressure Drop* requires the baghouses do be operated within the manufacturer's recommended range.

Permit Condition 4.9, *Phoenix Baghouse Dryer Fuel*, limits the Phoenix dryer to propane fuel only.

Permit Condition 4.10, *Monitoring Requirement*, establishes the requirement for weekly pressure drop monitoring and recordkeeping for the baghouse dryers.

Permit Section 5: CONVEYOR BAGHOUSES

The conveyor baghouses are considered product recovery devices, and therefore are not considered air pollution control devices.

Permit Condition 5.4, *Operation and Maintenance Manual*, establishes the requirement for an O&M manual for the baghouses.

Permit Condition 5.5, *Baghouse Filter Bag Requirements*, establishes a minimum 99.99% PM₁₀ efficiency for the baghouse filter bags – the collection efficiency claimed by Glanbia Richfield, and used to calculate the facility emissions.

Permit Condition 5.6, *Pressure Drop Monitoring Device*, requires pressure drop instrumentation on all the baghouse dryers.

Permit Condition 5.7, *Baghouse Pressure Drop* requires the baghouses do be operated within the manufacturer's recommended range.

Permit Condition 5.8, *Monitoring Requirement*, establishes the requirement for weekly pressure drop monitoring and recordkeeping for the conveyor baghouses.

7. PUBLIC COMMENT

In accordance with IDAPA 58.01.01.404.01.c and .209.01.c, a public comment period will be provided on the proposed Tier II operating permit and PTC.

8. RECOMMENDATION

Based on the review of the application materials, and all applicable state and federal regulations, staff recommends that DEQ provide proposed Tier II Operating Permit and PTC No. T2-050413 for public comment as required by IDAPA 58.01.01.404.01.c and 209.01.c.

CM/sd Permit No. T2-050413

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